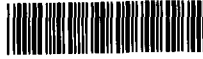


EPA Region 5 Records Ctr.



357470

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STATE OF ILLINOIS

FILE REVIEW AND ENVIRONMENTAL ASSESSMENT OF THE
BFI - NORTH CHICAGO LANDFILL

by

Kenneth S. Bardo, Solid Waste Specialist
and
Gregorio Millan, Ph.D., Administrative Engineer

Lake County Health Department
Division of Environmental Health
Environmental/Engineering Section
Waukegan, Illinois

April 1984

File Review and Environmental Assessment of the

BFI - North Chicago Landfill

Introduction.

Illinois Environmental Protection Agency (IEPA) and Lake County Health Department (LCHD) files were reviewed to assemble an operational history of the old BFI - North Chicago Landfill. Technical reports were available to ascertain local geological and groundwater conditions. Recent sampling of surface waters, leachate seeps and a private well by Lake County Health Department personnel allowed an impact assessment on the local environment.

General Background.

The BFI - North Chicago Landfill near 14th Street and Green Bay Road operated from July, 1971 through December, 1975. The site was permitted in two phases, with initial disposal on 4.6 acres at the east side and an additional 19.02 acres added to the west in April, 1974. Figure 1 indicates the approximate boundary of the filled area.

The 4.6 acre North Chicago/Municipal #2 Landfill was owned by the City of North Chicago and operated by National Disposal Service, Inc., which later became Browning-Ferris Industries of Illinois, Inc. (BFI). Seven IEPA and LCHD inspections during its operation noted minor violations, typically involving cover requirements. Information suggests hazardous wastes were not accepted at this facility.

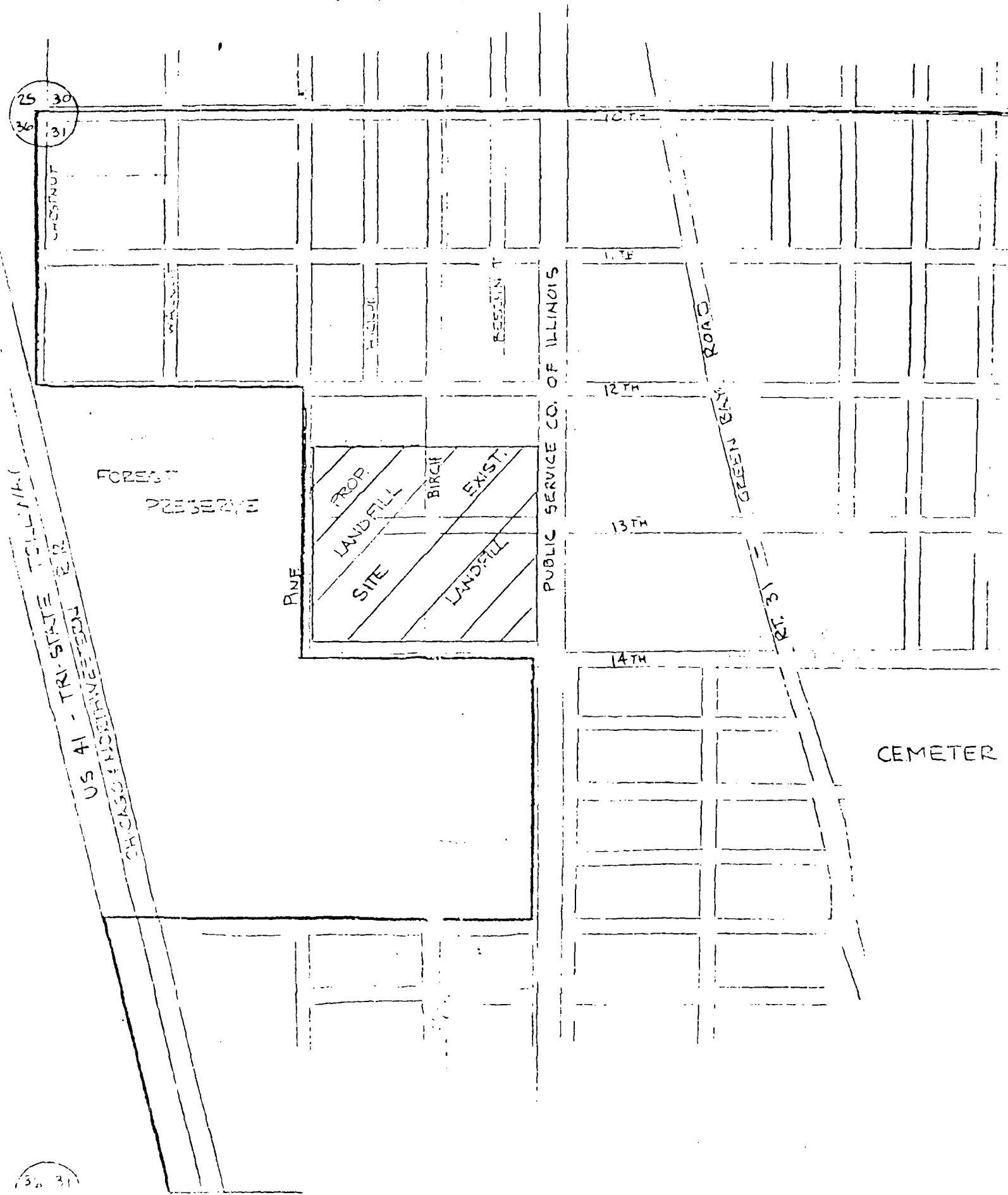
The 19.02 acre North Chicago/BFI Landfill was owned and operated by Browning-Ferris Industries of Illinois, Inc. Fifteen IEPA and LCHD inspections during its operation found the site in general compliance with only minor violations involving blown litter or cover requirements. No information on file indicates that hazardous wastes were accepted at this facility.

Waste Disposal History.

- 1970 - IEPA is formed. The North Chicago/Municipal #1 Landfill off Argonne Road is classified an open dump. City of North Chicago decides to phase out dump and open a sanitary landfill.
- 11/9/70 - National Disposal Service applies for an IDPH sanitary landfill permit on behalf of the City of North Chicago. New site to be located at 14th Street approximately 0.5 miles north of current dump. Will dispose of household refuse and building debris from North Chicago only.
- 4/20/71 - Same application submitted to IEPA for operating permit.
- 6/17/71 - IEPA grants Operating Permit #1971-20 to the City of North Chicago for a new solid waste disposal site (LPC09712502) to

FIGURE 1. Site Location

CITY OF WAUKESHA



be located on 4.6 acres in Lot 2, Block 1 and Lots 1 and 2, Block 4, NW $\frac{1}{4}$, Sec. 31, T 45N, R 12E. To be called North Chicago/Municipal #2 Landfill subject to special conditions requiring: 1) sealing of any permeable strata; 2) surface water controls; 3) installation of three monitor wells; and 4) water sample analyses.

- 6/28/71 - City of North Chicago applies for LCHD solid waste disposal operating permit.
- 7/7/71 - LCHD grants Operating Permit #111 to City of North Chicago for new sanitary landfill.
- 7/12/71 - North Chicago/Municipal #1 open dump closes. Becomes property of Foss Park District for conversion to a golf course.
- 10/3/72 - IEPA inspection: Additional cover needed and dumping refuse in water. National Disposal Service is site operator.
- 10/72 - City of North Chicago applies for IEPA variances to burn trees, blown down during a tornado, at the landfill.
- 2/6/73 - IEPA inspection: General compliance with minor cover violations.
- 2/9/73 - LCHD inspection: North area filled and north berm diverting surface flow around fill area.
- 3/27/73 - IEPA inspection: Blown litter problems and additional cover needed.
- 6/5/73 - LCHD inspection: Seeps at north end being repaired and final cover and grading occurring in north area. Site is 50% completed and in good shape.
- 6/27/73 - IEPA inspection: Cover needed and slope of active area is too steep.
- 8/1/73 - Site operator contract renewed with BFI (formerly National Disposal Service).
- 8/8/73 - IEPA inspection: General compliance with slight odor problem.
- 10/3/73 - LCHD inspection: Landfill closed, covered and graded but needs seeding.
- 10/24/73 - IEPA inspection: Site closed with final cover and grading near completion. Pond at west edge to collect leachate.
- 11/21/73 - IEPA Permit Section notifies BFI that monitor wells were never installed.
- 11/23/73 - BFI applies for LCHD operating permit to landfill Lot 2, Block 2 and Lots 1 and 2, Block 3, located west of closed North Chicago/Municipal #2 Landfill.

- 12/4/73 - IEPA grants Developmental Permit #1973-64-DE to BFI to develop a new solid waste disposal site on 12.4 acres west of closed portion. Will handle general solid waste and subject to special conditions requiring: 1) construction of cut-off berms and leachate collection facilities; 2) a new monitor well; 3) background water analyses; and 4) connect leachate collection system to sanitary sewer line.
- 12/12/73 - IEPA inspection: Site access adequately restricted, no monitor wells found and final cover needed at south end.
- 1/8/74 - LCHD grants Operating Permit #111A to BFI for new sanitary landfill.
- 1/14/74 - IEPA grants Supplemental Permit #1974-3 allowing BFI to install a 5000 gallon leachate collection tank.
- 1/22/74 - IEPA requests that monitor wells be installed and sampled for chloride, iron and TDS. BFI replies wells were installed but not sampled.
- 2/8/74 - IEPA grants Supplemental Permit #1974-18 to develop an additional 6.62 acres (old disposal area) east of permitted 12.4 acres.
- 3/12/74 - IEPA grants Supplemental Permit #1974-39 to amend Developmental Permit 1973-64-DE. Filling will commence in eastern 6.62 acres and be subject to special conditions requiring: 1) installation and construction of drainage facilities and berm in northeast area; 2) discharge of retention pond water to drain or stream; 3) fencing; 4) background analyses of groundwater; and 5) filling will not commence in west portion until a new monitor well is installed, appropriate development procedures are followed and berms on the eastern 6.62 acres are constructed.
- 3/27/74 - IEPA inspection: In compliance with Supplemental Permit #1974-18. Impounded water being pumped to storm drain, ten foot berm at north end and fencing being installed.
- 4/2/74 - IEPA grants Operating Permit #1973-64-OP to BFI for a new solid waste disposal site (LPC09712503) to be located on 19.02 acres in NW₄, Sec. 31, T 45N, R 12E. To be called North Chicago/BFI Landfill subject to special conditions requiring: 1) construction of cut-off trenches, berms, fences and 5000 gallon leachate collection tank before filling proceeds to the western 12.4 acres; and 2) quarterly analyses of monitor wells for chloride, iron, COD and TDS.
- 4/22/74 - IEPA inspection: General compliance with blown litter. Eastern 6.62 acres being filled adjacent to closed North Chicago/Municipal #2 Landfill. A north end berm diverts surface water and ponded water being pumped by 14th Street.
- 5/16/74 - IEPA grants Supplemental Permit #74-66 allowing BFI to remove monitor wells W5 and W6. Wells W1, W2, W3 and W4 shall be monitored.

- 5/16/74 - BFI requests that berm height be reduced from ten to six feet (cont.) above ground level.
- 5/22/74 - IEPA grants Supplemental Permit #74-75 allowing BFI to lower berm heights with no berm required at east end due to height of old landfill.
- 5/25/74 - LCHD inspection: Well W3 has been removed.
- 5/27/74 - LCHD inspection: General compliance with some daily cover needed.
- 5/28/74 - IEPA/LCHD inspection: General compliance.
- 6/17/74 - IEPA letter sent as a reminder of quarterly water monitoring program.
- 7/16/74 - IEPA/LCHD inspection: General compliance.
- 8/3/74 - IEPA grants Supplemental Permit #74-10 allowing BFI to: 1) use trench method rather than area fill; 2) leave a natural soil wall between the old and new landfill; 3) use east-west trenches and develop site from south to north; and 4) slope trenches to the northwest. These changes were necessary due to wet conditions.
- 9/17/74 - IEPA/LCHD inspection: General compliance.
- 10/21/74 - IEPA/LCHD inspection: General compliance with blown litter.
- 12/2/74 - IEPA grants Supplemental Permit #74-156 in response to plans submitted on 10/4/74. Operational difficulties were encountered due to perched water in the sand and silt subsoil. BFI requests that cut-off walls be replaced by limiting any excavation to two feet above the sand and silt layer. The fill invert will be kept above the saturated zone. There will be no leachate collection system. This change along with increased waste loads will reduce the site life. IEPA special conditions require: 1) no refuse be placed below a depth of 7 ft.; 2) the western 275 ft. (i.e., 275 ft. east of Pine Street) of the permitted area will have no refuse placed below a depth of 1.5 ft.; and 3) a minimum 3 ft. clay buffer zone remain between refuse and permeable layers.
- 12/3/74 - IEPA inspection: General compliance with blown litter. Disposal area in west 12.4 acres.
- 4/11/75 - IEPA inspection: General compliance with some daily cover needed.
- 5/12/75 - IEPA inspection: General compliance.
- 5/26/75 - LCHD inspection: General compliance.
- 6/13/75 - LCHD inspection: General compliance.
- 7/15/75 - LCHD inspection: General compliance.

- 8/4/75 - LCHD inspection: General compliance.
- 8/14/75 - IEPA inspection: Improvement needed because of cover violations and blown litter. Site expected to close in four months.
- 1/5/76 - IEPA inspection: Site closed but not covered.
- 1/7/76 - BFI states no trash was accepted after 12/31/75.
- 1/12/76 - BFI expects to cover site in summer of 1976 when weather improves.
- 3/8/76 - IEPA inspection: Final cover needed and leachate flows observed.
- 8/30/76 - IEPA grants operating permit for new BFI landfill in Benton Township.
- 11/23/76 - IEPA inspection: Site still is closed but not covered. Final cover needed in southwest area; there is no site restriction and grading/seeding required.
- 1/4/77 - BFI files Plat of Survey with Lake County indicating extent of sanitary landfill.
- 1/5/77 - BFI will obtain cover material from 14th Street extension.
- 8/13/77 - IEPA inspection: Inadequate final cover, erosion on south slope, leachate seep at southeast area and grading/contouring needed.
- 9/13/77 - BFI will haul cover material from Benton Township site and correct leachate flow problems.
- 10/4/77 - BFI informs IEPA that monitor wells W2 and W3 were destroyed during 14th Street extension project and requests only wells W1 and W4 be monitored.
- 11/9/77 - IEPA grants Supplemental Permit #1977-1386 to reinstall well W3 and discontinue monitoring program for well W2. Groundwater flow considered to be southwesterly toward well W3.
- 3/16/78 - IEPA inspection: Monitor wells W2 and W3 are destroyed. Erosion on south and west side slopes.
- 5/10/78 - IEPA inspection: Site considered closed and covered.
- 5/23/78 - IEPA letter officially declares site to be closed and covered. A three year post-closure monitoring period is required.
- 6/8/78 - IEPA inspection: Well W3 found and stick-up replaced.
- 4/11/79 - LCHD lodges complaint concerning leachate flows.
- 5/3/79 - IEPA inspection: Leachate flows on north, west and especially south sides.
- 5/31/79 - IEPA letter requests correction of leachate problem. Additional cover is needed on south slope. Major problem area is the west 12.4 acres.

- 10/16/80 - IEPA inspection: Wells W1 and W3 located but could not be sampled. Garbage exposed and leachate flows in southeast and west areas.
- 11/3/80 - BFI will correct problems by adding additional cover.
- 8/4/81 - IEPA inspection: Leachate and erosion problems corrected.
- 3/24/83 - LCHD samples surface water, leachate flow and a private well.
- 8/2/83 - LCHD samples surface water, leachate flow and a private well.
- 3/21/84 - LCHD samples surface water, leachate flows and a private well. Leachate problems noted on south, west and northwest slopes.
- 4/6/84 - LCHD samples Dougherty well.

Hydrogeology.

Twelve soil borings were performed by Soil Testing Services in 1970, 1971 and 1973. Six borings in the western half of the site generally indicate:

1. Glacial drift strata are related to topography.
2. A continuous permeable sand and silt layer approximately 8 ft. to 10 ft. thick underlies a 4 ft. to 10 ft. silty clay surface layer.
3. The permeable layer is underlain by a dense silty clay strata.
4. The permeable layer slopes to the west and becomes finer-textured, i.e., sand grading to silt.
5. Groundwater level at the western edge of the site is within 2 ft. of the surface.
6. The long-term hydrostatic water table is 13 ft. to 18 ft. below ground level.
7. A perched water table probably exists at the west edge of the site where the permeable layer is saturated.
8. The permeable layer in the central portion of the site is saturated only in the lower portion.
9. Groundwater flow in the lower silty clay layer appears to be southwesterly.

Groundwater Analyses.

Monitor wells W1, W3 and W4 were sampled for chloride, iron, chemical oxygen demand (COD), residue on evaporation (ROE) and specific conductivity (SC) through 6/9/81 as part of BFI's quarterly water monitoring program. Groundwater has not been greatly affected by landfill leachate, although COD showed some increase in the final half-year of sampling. IEPA samples did not indicate any groundwater problems. The wells monitor the deeper clay strata rather than the permeable sand and silt layer. Wells still exist but the small casing prevented sampling by LCHD personnel.

LCHD Sampling.

Table 1 is a summary of sample results from LCHD investigations and Figure 2 shows sample locations. These results indicate:

1. The south and north leachate seeps exceed Effluent Standards (35 Ill. Adm. Code 304) for ammonia (Sec. 304.122), BOD (Sec. 304.120), iron and phenols (Sec. 304.124). The leachate would also be classified an offensive discharge (35 Ill. Adm. Code 304.106). See Appendix.
2. Elevated BOD, COD and phenol concentrations in both leachate seeps indicate a heavy organic load being contributed to surface waters in the area.
3. Elevated levels of ammonia, BOD, boron, COD, chloride, hardness, iron, ROE, SC and sulfate are found in the north and south drainage ditches. Surface water degradation is due to leachate seeps and possible direct groundwater discharge.
4. The possible presence of phenols in the Dougherty private well required further investigation. New water samples were collected and analyzed by TEI Analytical, Inc. The results indicate no organic contaminants in the Dougherty private well (see continuation of Table 1.).

Conclusions.

1. County and State files indicate hazardous wastes were not accepted at this landfill.
2. Leachate seeps noted as early as 6/5/73 and subsequently documented on 8/13/77, 4/11/79, 5/3/79, 10/16/80, 3/24/83, 8/2/83 and 3/21/84 indicate a groundwater mound within the landfill. Mounding results from inadequate final cover.
3. Surface water is degraded in the immediate area due to leachate seeps and possibly direct groundwater discharge.
4. Flooding at the western boundary may raise the water table in the landfill and promote leachate production.
5. Lake County Health Department and TEI Analytical, Inc., laboratory results indicate organic contaminants do not occur in the Dougherty private water supply and that the water supply is suitable for human use and consumption.
6. Further study of the Dougherty water supply is necessary to determine any future impact the landfill may have on the dolomite aquifer.

Recommendations.

1. Immediate action is necessary on the landfill sideslopes to correct leachate seeps that are degrading surface waters.
2. A thick clay cover with a good establishment of prairie grasses should be developed to reduce water infiltration and leachate production within the landfill.

Recommendations (cont.).

3. The Dougherty private well sampling should be continued.
4. Limit site development to uses, such as grassland or parking area, that will reduce or prevent water infiltration and leachate production.

SUMMARY OF CHEMICAL ANALYSES

Source or Location: BFI - No. Chicago

Spring
Stream
Pond
Well

Parameter (mg/l)	North Leachate Seep		North Drainage Ditch	
	-	- 3/21/84	-	- 3/21/84
Alkalinity				
Ammonia (as N)		150.0		0.72
Arsenic As				
Barium Ba				
BOD-5		180.0		39.00
Boron B		2.76		0.16
Cadmium Cd				
Calcium				
COD		896.0		52.0
Chloride		217.9		38.9
Chromium Cr (tot)				
Copper Cu				
Cyanide CN				
Fecal Coliform #100 ml		4100		4100
Fluoride				
Hardness CuCO ₃		2500		220
Iron Fe (total)		19.0		0.36
Lead Pb				
Magnesium Mg				
Manganese Mn				
Mercury Hg				
Nickel Ni				
Nitrate-Nitrite		0.45		0.06
Oil & Grease				
pH (units)		6.70		7.80
Phenols		4.40		0.10
Phosphorus P		0.06		0.01
Potassium K				
R.O.E. (180°C)		7911		346
Selenium Se				
Silver Ag				
SC (unhos/cm)		8000		660
Sodium Na				
Sulfate SO ₄		267		59.5
TSS				
Zinc Zn				
Turbidity (FTU)				
Total Coliform (#100ml)				
Sulfide				

ADDITIONAL RESULTS AND INTERPRETATION OF WATER ANALYSES AT
THE NORTH CHICAGO/BFI LANDFILL

On April 6, 1984, an additional water sample was obtained from the Dougherty private well located on Twelfth Street, just north of the old North Chicago/BFI Landfill. Concentrations of 110 organic priority pollutants were determined by TEI Analytical, Inc. (Park Ridge, Il.). Detection limits varied from 0.001 mg/l to 0.10 mg/l.

The results (see attached) indicate organic contaminants do not occur in the Dougherty private water supply which taps the dolomite bedrock. Combined with inorganic results obtained by the Lake County Health Department Laboratory, this water supply is suitable for human use and consumption.

Additional sampling for phenols was undertaken on May 1, 1984. Sample locations include the Dougherty and Perala private wells near the North Chicago/BFI Landfill and 17 residences located near 4 other landfills. Analysis will be performed at Aqualab (Streamwood, Il.) using a detection limit of 0.001 mg/l. The results are expected to resolve any concerns about water supplies.

ILLINOIS WATER STANDARDS CHART

Parameter (concentration mg/l)	IEPA General Water Quality Standards ^a for Surface and Non-drinking Water (i.e., streams & monitor wells)	IEPA Public & Food Processing Water Supply Standards ^b for Present and Potential Water Supplies (i.e., private wells)	IEPA General Effluent Standards ^c for Discharge Waters (i.e., leachate seeps)
Ammonia as N	15.	15.	3.0
Boron (B)	1.0	1.0	-
BOD ₅	-	-	30.
Chloride (Cl)	500.	250.	-
COD	-	-	-
Total Coliforms (#/100 ml)	-	0 ^d	-
Fecal Coliforms (#/100 ml)	200. ^e	0 ^d	400.
Iron (Fe)	1.0	1.0	2.0
Nitrate as N	-	10.	-
pH (units)	6.5 - 9.0	6.5 - 9.0	6.0 - 9.0
Phenols	0.1	0.001	0.3
Phosphorous, Total (P)	0.05	0.05	1.0
Specific Conductivity (µmhos/cm)	-	-	-
Sulfate (SO ₄)	500.	250.	-
Total Solids	-	500. ^f	-

a) 35 Ill. Adm. Code, Part 302, Subpart B.

b) 35 Ill. Adm. Code, Part 302, Subpart C.

c) 35 Ill. Adm. Code, Part 304, Subpart A.

d) Safe Drinking Water Act.

e) Geometric mean of 5 or more samples during a 30 day period; also see Ref. a.

f) Equivalent to total dissolved solids.

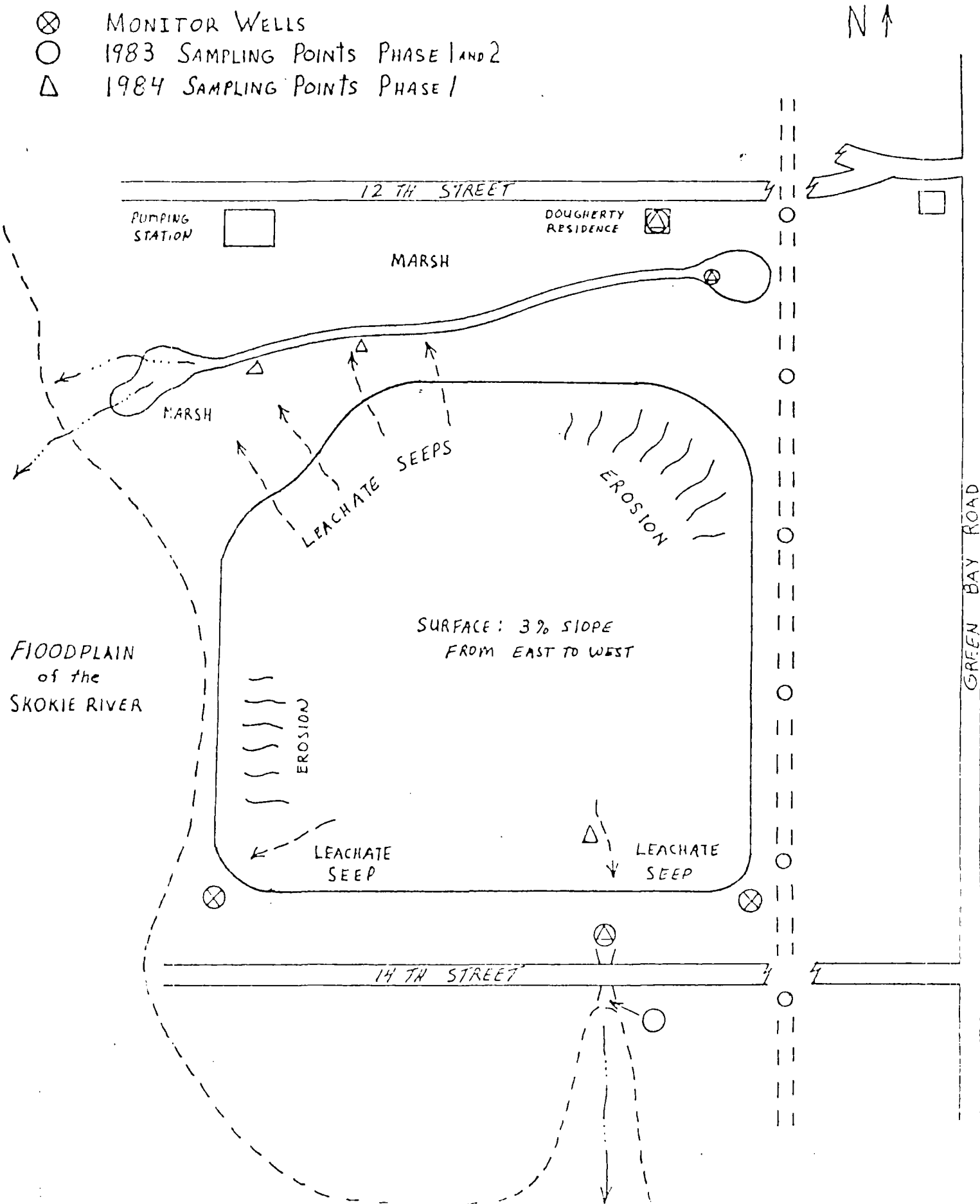
- Indicates Standards are not available.

Hardness as CaCO₃
(mg/l)

0 - 60 Soft
61 - 120 Moderately Soft
121 - 180 Hard
> 180 Very Hard

APPENDIX

FIGURE 2. NORTH CHICAGO / BFI LANDFILL



equalizing
1120 g. ...
strengthened ...
312 288-3100

17 May 1984

analytical report

55896-914

Mr. M. N. Sherma
Division of Environmental Health
LAKE COUNTY HEALTH DEPT.
3010 Grand Ave.
Waukegan IL 60085

date 5/1/84

5/1/84

<u>Sample Description</u>	<u>Phenol mg/L</u>	<u>Sample Description</u>	<u>Phenol mg/L</u>
BFI - Dougherty	<0.002	#1 R. Thompson, 12028 Hendee	0.004
BFI - Peralta	<0.002	#1 P. Hendley, 2700 Hendee	<0.002
ARF - Kawaii	<0.002	#2 C. Nelms, 36767 Adelphi	0.004
ARF - Reid/Russo	0.005	M. DeBaer, 11599 Hickory	<0.002
ARF - Esser	0.004	Ahern, 11553 Oak	0.003
#2 L. Bushmore, 3033 Colorado	<0.002	Krause, 3118 Oak	<0.002
R. Clark, 11563 Oak	0.005	#1 C. Schaufel, 37680 McAfee	0.002
#2 R. Niemi, 2215 Adelphi	0.004	#1 G. Umek, 12271 Paddock	<0.002
#2 D. Powers, 36670 Adelphi	0.004	#1 R. Ori, 12170 Hendee	0.003
M. Clark, 11737 Beach	0.005		

Robert N. Bucaro
Robert N. Bucaro

	<u>mg/l</u>
4,4 DDD	< 0.01
a-endosulfan	< 0.01
B-endosulfan	< 0.01
Endosulfan sulfate	< 0.01
Endrin	< 0.01
Endrin aldehyde	< 0.01
Heptachlor	< 0.01
Heptachlor epoxide	< 0.01
a-BHC	< 0.01
B-BHC	< 0.01
g-BHC	< 0.01
d-BHC	< 0.01
PCB 1242	< 0.01
PCB 1254	< 0.01
PCB 1221	< 0.01
PCB 1232	< 0.01
PCB 1248	< 0.01
PCB 1260	< 0.01
PCB 1016	< 0.01
Toxaphene	< 0.01
2,3,7,8 tetrachlorodibenzo p dioxin	< 0.01

\$ 550.00

J. E. MacRae

	<u>mg/l</u>
1,2 t-dichloroethylene	< 0.001
2,4 Dichlorophenol	< 0.01
1,2 Dichloropropane	< 0.001
2,4 Dimethylphenol	< 0.01
2,4 Dinitrotoluene	< 0.01
2,6 Dinitrotoluene	< 0.01
1,2 Diphenylhydrazine	< 0.01
Ethyl benzene	< 0.001
Fluoranthene	< 0.01
4 Chlorophenyl phenyl ether	< 0.01
4 Bromophenyl phenyl ether	< 0.01
Bis (2-chloroisopropyl) ether	< 0.01
Bis (2-chloroethoxy) methane	< 0.01
Methylene Chloride	< 0.001
Methyl Chloride	< 0.001
Methyl Bromide	< 0.001
Bromoform	< 0.001
Dichlorobromomethane	< 0.001
Chlorodibromomethane	< 0.001
Hexachlorobutadiene	< 0.01
Hexachlorocyclopentadiene	< 0.01
Isophorone	< 0.01
Naphthalene	< 0.01
Nitrobenzene	< 0.01
2 Nitrophenol	< 0.01
4 Nitrophenol	< 0.01
2,4 Dinitrophenol	< 0.01
4,6 Dinitro-o-cresol	< 0.01
N-nitrosodimethylamine	< 0.01
Aldrin	< 0.01
Dieldrin	< 0.01
Chlordane	< 0.01
4,4 DDT	< 0.01
4,4 DDE	< 0.01

9-6-72 Ma. L.

	<u>mg/l</u>
2-Chlorophenol	< 0.01
1,2 Dichlorobenzene	< 0.01
1,3 Dichlorobenzene	< 0.01
1,4 Dichlorobenzene	< 0.01
N-nitrosodi-n-propyl amine	< 0.01
Pentachlorophenol	< 0.01
Phenol	< 0.01
Bis (2 ethylhexyl) phthalate	< 0.01
Butyl Benzyl Phthalate	< 0.01
Di-n-butyl phthalate	< 0.01
Di-n-octyl phthalate	< 0.01
Diethyl phthalate	< 0.01
Dimethyl phthalate	< 0.01
1,2 benzanthracene	< 0.01
Benzo-a-anthracene	< 0.01
Benzo-a-pyrene	< 0.01
3,4 Benzofluoranthene	< 0.01
11,12 Benzofluoranthene	< 0.01
Chrysene	< 0.01
Acenaphthylene	< 0.01
Anthracene	< 0.01
1,12 Benzoperylene	< 0.01
Fluorene	< 0.01
Phenanthrene	< 0.01
1,2,5,6 Dibenzoanthracene	< 0.01
Ideno (1,2,3-cd) Pyrene	< 0.01
Pyrene	< 0.01
Tetrachloroethylene	< 0.001
Toluene	< 0.001
Trichloroethylene	< 0.001
Vinyl Chloride	< 0.001
3,3 Dichlorobenzidine	< 0.01
1,1 Dichloroethylene	< 0.001

J. E. MacKenzie

TEI ANALYTICAL, INC.

460 SOUTH NORTHWEST HIGHWAY • PARK RIDGE, ILLINOIS • 60068 • 312/696-2070

April 20, 1984

Laboratory Report #1266

RECEIVED

APR 23 1984

Mr. Ken Bardo
Lake County Health Dept.
Environmental Health Division
3010 Grand Avenue
Waukegan, Illinois 60085

ENVIRONMENTAL HEALTH DIVISION

Sample received
April 6, 1984

[TEI-16624] Dougherty Well (BFI) 4/6/84

	<u>mg/l</u>
Acenaphthene	< 0.01
Acrolein	< 0.10
Acrylonitrile	< 0.10
Benzene	< 0.001
Benzidine	< 0.01
Carbon Tetrachloride	< 0.001
Chlorobenzene	< 0.001
1,2,4 Trichlorobenzene	< 0.01
Hexachlorobenzene	< 0.01
1,2 Dichloroethane	< 0.001
1,1,1 Trichloroethane	< 0.001
Hexachloroethane	< 0.01
1,1 Dichloroethane	< 0.001
1,1,2 Trichloroethane	< 0.001
1,1,2,2 tetrachloroethane	< 0.001
Chloroethane	< 0.001
Bis (2 chloroethyl) ether	< 0.001
2-chloroethyl vinyl ether	< 0.001
2 Chloronaphthalene	< 0.01
2,4,6 Trichlorophenol	< 0.01
o-chloro p-cresol	< 0.01
Chloroform	< 0.001

g. e. Marks